

U.S.S.N. 10/605,475

8

137276MG (GEMS 0220 PA)

REMARKS

In the Non-Final Office Action dated June 14, 2005, claims 1-25 are pending. Claims 1, 13, and 22 are independent claims from which all other claims depend therefrom. Claims 1, 13, and 22 are herein amended. Claim 26 is newly added.

Claims 1-6, 8-17, and 19-25 stand rejected under 35 U.S.C. 102(e) as being anticipated by Burl et al. (U.S. Patent No. 6,593,744 B2).

Claims 1 and 13 have similar limitations and are therefore described together. Claims 1 and 13 recite an integrated electronic system housing and magnet structure and an imaging system. Claim 1 includes the limitations of a magnet structure, a housing, and a RF shield. The magnet structure contains a superconducting magnet and an RF coil assembly. The housing contains imaging system support electronics having a controller or a microprocessor and does not contain the RF coil assembly. The housing is attached to and external from the magnet structure. The RF shield is coupled to the housing and prevents RF interference between the support electronics and the RF coil assembly. Claim 13 recites the limitations of claim 1 except the RF shield prevents RF interference, generated by the magnet structure, between the magnetic field and the support electronics. Claim 13 also requires that the housing be separate from the magnet structure.

Burl discloses an MRI system. The MRI system includes a bore type magnet structure that contains a primary magnet coil 12, a gradient coil assembly, and a RF coil or RF coil assembly 26, 34, see col. 4 and Figure 1 of Burl. The magnet structure is not labeled by a numerical designator, but refers to the whole structure shown in Figure 1 of Burl. The magnet structure is not attached to and is separate from computer control, reconstruction, and electronic devices 10, 20, 38, 24, 40, 42, 44, 50, 52, 54, and 56. An RF cable trap 70 is disposed within the magnet structure and is coupled to the RF coil 26. The RF cable trap 70 includes an inductor 116 that has a RF shield 122.

U.S.S.N. 10/605,475

9

137276MG (GEMS 0220 PA)

In paragraph 2, the Office Action states that Burl discloses an integrated electronic system housing 84 and a magnet structure that comprise a magnet structure that comprises a superconducting magnet and an RF coil assembly ["and", ",", or "the" ?] a housing [84?] attached to and external from the magnet structure, the housing containing imaging system support electronics and not the RF coil assembly 84. Applicant respectfully traverses and submits that it is unclear from this paragraph exactly what it is that the Examiner feels is disclosed by Burl.

In the stated paragraph 2, the Office Action states that Burl discloses an integrated electronic system housing 84 and a magnet structure that comprises a magnet structure. Applicant submits that the housing 84 of Burl does not comprise, include, or contain a magnet structure, but rather is contained within a bore type magnet structure. This can readily be seen in Figures 1, 2A, and 2B of Burl. Also, in stating that a magnet structure comprises a magnet structure, Applicant is unsure what magnet structures the Examiner is referring to in the Office Action. As stated, Burl discloses a bore type magnet structure that contains the housing 84.

The stated paragraph also states that Burl discloses a housing attached to and external from the magnet structure. Applicant is unsure what housing is referred to in the Office Action, since a ",", "and", "the" or other article, indicator, or numerical designator is missing prior to that statement and after the term housing. Applicant assumes that the Office Action is referring to the housing 84 since it states that the housing contains imaging system support electronics and not the RF coil assembly.

Notice that the only object disclosed by Burl that contains a superconducting magnet and an RF coil assembly is the whole bore type magnet structure shown in Figure 1. Notice that the housing 84 of Burl clearly does not contain the primary magnet coil 12 and the RF coil assembly 26, 34. Also notice

U.S.S.N. 10/605,475

10

137276MG (GEMS 0220 PA)

that the housing 84 and the bore type magnet structure of Burl does not contain a controller.

With respect to claim 5, in paragraph 6, the Office Action states that Burl discloses a housing that comprises imaging system support electronics that comprises at least one of a radio frequency amplifier, a gradient amplifier, a timing device, an oscillator, a radio frequency transmitter, a gradient coil controller, and a sequence controller. Applicant traverses. Applicant again assumes that the Examiner is referring to the housing 84. The housing 84 includes a channel 80, capacitors 82, 83, an inductor 116, and a shield 122, none of which are recited in claim 5. Notice that although Burl may disclose one or more of the items recited in claim 5, that the items of Burl, namely items 10, 20, 38, 24, 40, 42, 44, 50, 52, 54, and 56, are external to both the bore type magnet structure and the housing 84 of Burl.

With respect to claim 14, in paragraph 9, the Office Action states that Burl discloses a second housing that contains a magnet structure, and in doing so refers to the vacuum vessels of Burl. Applicant agrees that Burl discloses a vacuum vessel that contains a primary magnet. Applicant disagrees that the vacuum vessels of Burl contain the bore type magnet structure.

The Office Action also states that the first housing and the second housing are integrally formed as a single housing. Applicant again assumes that the first housing referred to is the housing 84. Applicant traverses and submits that the vacuum vessels of Burl are not integrally formed as a single housing with the housing 84. The housing 84 is separate and is not even in contact with the vacuum vessels of Burl. The vacuum vessels of Burl contain the primary magnet and do not contain the housing 84. This can also be readily seen in Figure 1.

Claim 22 recites the limitations of a first housing that contains imaging system support electronics with one or more of a radio frequency amplifier, a gradient amplifier, a timing device, an oscillator, a radio frequency transmitter, a gradient coil controller, a microprocessor, and a sequence controller. A second

U.S.S.N. 10/605,475

11

137276MG (GEMS 0220 PA)

housing is integrally formed with the first housing and contains a magnet structure, which is separate from the first housing. The magnet structure generates a magnetic field and includes a superconducting magnet, a gradient coil assembly, and a radio frequency receiver coil. A radio frequency shield is coupled within the first housing, encases the support electronics, and prevents radio frequency interference between the support electronics and the radio frequency receiver coil.

Burl fails to teach or suggest a first housing that contains imaging system support electronics with one or more of a radio frequency amplifier, a gradient amplifier, a timing device, an oscillator, a radio frequency transmitter, a gradient coil controller, and a sequence controller and a second housing that is integrally formed with the first housing and contains a magnet structure, which is separate from the first housing. See arguments above and notice that items designated as 10, 20, 38, 24, 40, 42, 44, 50, 52, 54, and 56 are external to the bore type magnet structure, the vacuum vessels, and the housing 84 of Burl. Also, note that none of the items 10, 20, 38, 24, 40, 42, 44, 50, 52, 54, and 56 are encased by an RF shield.

With respect to claim 25, in paragraph 11, the Office Action states that the housing does not contain the magnet structure. Note that this contradicts what is stated in paragraph 2 of the Office Action, which states that Burl discloses a housing that comprises a magnet structure, since both statements refer to the housing 84.

In order for a reference to anticipate a claim the reference must teach or suggest each and every element of that claim, see MPEP 2131 and *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628. Therefore, since Burl fails to teach or suggest each and every limitation of claims 1, 13, and 22, they are novel, nonobvious, and are in a condition for allowance. Also, since claims 2-6, 8-12, 14-17, 19-21, and 23-25 depend from claims 1, 13, and 22, respectively, they too are novel, nonobvious, and are in a condition for allowance for at least the same reasons.

U.S.S.N. 10/605,475

12

137276MG (GEMS 0220 PA)

Claims 7 and 18 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Burl in view of Ladebeck (U.S. Pat. No. 5,994,903).

Applicant submits that since claims 7 and 18 depend from claims 1 and 13, respectively, they are also novel, nonobvious, and are in a condition for allowance for at least the same reasons as put forth above.

Ladebeck, like Burl, also fails to teach or suggest a magnet structure and a housing, the magnet structure containing a superconducting magnet and an RF coil assembly and the housing attached to and external from the magnet structure and containing imaging system support electronics having a controller and not a RF coil assembly.

Referring to MPEP 706.02(j) and 2143, to establish a *prima facie* case of obviousness the prior art reference(s) must teach or suggest all the claim limitations, see *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Thus, Applicant submits that Burl and Ladebeck fail to teach or suggest each and every limitation of claims 7 and 18, therefore, claims 7 and 18 are novel, nonobvious, and are in a condition for allowance.

With respect to new recited claim 26, although Ladebeck discloses conductors 11 having capacitors 13 therebetween, Ladebeck does not disclose multiple layers having capacitance therebetween without the use of capacitors. Thus, none of the relied upon references teach or suggest each and every limitation of claim 26.

In light of the amendments and remarks, Applicant submits that all of the objections and rejections are now overcome. The Applicant has added no new matter to the application by these amendments. The application is now in condition for allowance and expeditious notice thereof is earnestly solicited. Should the Examiner have any questions or comments, the Examiner is respectfully requested to contact the undersigned attorney.

U.S.S.N. 10/605,475


13

137276MG (GEMS 0220 PA)

The Commissioner is hereby authorized to charge any additional fee, which may be required or credit any overpayment to Deposit Account No. 50-0476.

Respectfully submitted,

ARTZ & ARTZ P.C.


Jeffrey J. Chapp, Reg. No. 50,579
28333 Telegraph Road, Suite 250
Southfield, MI 48034
(248) 223-9500

Dated: August 23, 2005